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APPENDIX III

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of)	
Erik A. T. Trommelen, et al)	
Serial No. 10/537,686)	Docket No. A0005/US
Filing or 371(c) date June 6, 2005)	Group Art Unit 1714
BITUMINOUS COMPOSITIONS)	Examiner Peter A. Szekely
COMMISSIONER FOR PATENTS)	August 10, 2006
Washington, DC 20231)	

DECLARATION UNDER 37 CFR 1.131

I, Jan Korenstra, hereby declare that:

I am one of the listed inventors of claims 9 to 27 of U.S. Patent Application No. 10/537,686 filed on June 6, 2005, entitled "Bituminous Compositions";

That prior to the effective date of U.S. Patent No. 6,833,411, August 6, 2002, I, along with the other inventors, completed our invention as described and claimed in the present application in a WTO country as evidenced by Exhibit A attached hereto (the Reported Invention submitted to Legal - Intellectual Property) which provides a description of the polymers prepared and the results obtained when used for bitumen modification in road and roofing applications;

That the date redacted in the box on page 1 of Exhibit A is prior to August 6, 2002; and

That the remaining information redacted from Exhibit A is not needed to show completion of our invention;

I, Jan Korenstra further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.


Jan Korenstra10 - August 2006
Date

Exhibit A

KAC-5

REPORTED INVENTION
Legal - Intellectual Property

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SUBJECT:

- ☐ I/We wish to bring to your attention the invention that is briefly described below for your consideration of the possibility of applying for a patent.

1. DESCRIPTION OF INVENTION

Coupled tri block copolymers have been synthesised in which the mid block is defined as a mixed butadiene/isoprene block in which the ratio butadiene/isoprene is 1/1 resp. 3/1. The polymers are characterised by a styrene content of 30 %m, are coupled with GPTS and have coupling efficiencies of 87.5 % resp. 96.7%. The molecular weight of the major component of the polymers is 368.000 resp. 319.700

The polymers mentioned above have been applied for bitumen modification in road construction and for roofing materials.

One other triblock copolymer has been synthesised in a full sequential way. This polymer is characterised by a styrene content of 23%m and a molecular weight of 372.000. The ratio butadiene / isoprene is 1/1.

Appendix 1

Related to road application the benefit of the polymers mentioned above is, that compared to the usually applied radial SBS tri block polymer, less viscosity increase has been recorded during long term storage at 180°C keeping the blended bitumen better manageable after hot storage. The more isoprene present, the lower the viscosity after the storage test. As a consequence there is also somewhat more reduction in softening point. Gel formation in a blend with SBS takes place after 72 hours, while with the mixed mid-block the gelation test was stopped after 144 hrs.

Appendix 2

In roofing application the SIBS polymer was used to create a better balance between the tackiness of the compound and the rheological requirements of self adhesive compounds. It has

been shown that adequate flow resistance and low temperature flexibility were obtained (similar to SBS containing compounds), while the tack at about 20°C of the formulated product is very good compared to the reference SBS based products; also the T-peel force is more than double the value of the reference compound.

2. PROBLEM SOLVED

1. The problem solved was that, applying a radial tri-block polymer of high molecular weight, gel formation has been prevented on prolonged stirred storage, keeping the product manageable.
2. Adhesive strength can be strongly improved.

3. TEST DATA OR REDUCTION TO PRACTICE

Data can be found in Appendix 1 (road application) and appendix 2 (roofing application data)

[illegible]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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